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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/617,596	07/07/2000	Grant McGibney	LAMA115733	6394

26389 7590 10/28/2003

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EXAMINER

WONG, BLANCHE

ART UNIT	PAPER NUMBER
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2667

DATE MAILED: 10/28/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/617,596

Applicant(s)

MCGIBNEY, GRANT

Examiner

Blanche Wong

Art Unit

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7,8,10,11,12,13,15 is/are allowed.
- 6) ☒ Claim(s) 1,6,9,14,16 is/are rejected.
- 7) ☒ Claim(s) 2-5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,6,7,8. 6) ☐ Other:

DETAILED ACTION

1. The title "OFDM System with Simple Terminals" is specific to this invention and acceptable.
2. The abstract of the disclosure is objected to because the first sentence is too vague. The invention is a wireless network based on not only OFDM, but also simple terminals. Correction is required. See MPEP § 608.01(b).
3. It is noted in the original filing that there is a typographical error in claim 14. Claim 14 speaks of "the wireless terminal of claim 8" but claim 8 does not refer to a wireless terminal. Claim 14 follows claim 13 and claim 13 refers to a wireless terminal. For simplicity, claim 14 will read "the wireless terminal of claim 13."

Information Disclosure Statement

4. The information disclosure statement filed on July 7, 2000, fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The publications as provided on the Informative Disclosure Statement dated December 13, 2000, "Asymmetric Orthogonal Frequency Division Multiplexing" by G.H. McGibney and S.T. Nichols (C1) and "Wireless Networking with Simple Terminals" of Thesis of Grant McGibney (C2), were not found in the record of the file.

Drawings

5. The drawings are objected to because DATA IN and DATA OUT are mislabeled in Figure 2. DATA IN and DATA OUT are reversed; DATA OUT should be DATA IN, and DATA IN should be DATA OUT. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 6, 9, 14 and 16 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 6 recites the limitation "the magnitude of the channel corresponding to the sub-carrier." Claims 9 and 14 recite "equal magnitudes." Claim 16 recites "the magnitude of the corresponding radio channel." There is insufficient antecedent basis for any magnitude limitation in these claims.

9. Claim 16 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claim 16 recites the limitation "the corresponding radio channel" and "the code symbols" in the three-step method. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claim 1 rejected under 35 U.S.C. 102(b) as being anticipated by Kamerman et al. (EP 0 702 466 A2), as provided by the applicant.

Regarding claim 1, the EP 0 702 466 A2 reference shows in Fig. 3 an OFDM receiver for receiving (82-90) an information bearing OFDM signal wherein the information is carried by each sub-carrier of a set of carriers (16-sub channel OFDM/QPSK, col. 3, lines 25-30). The receiver, then constructively combines the sub-carriers (102) to produce a combined signal (104) for extracting the information (see the paragraph bridging columns 5-6).

Allowable Subject Matter

13. Claims 7, 8, 10, 11, 12, 13 and 15 are allowed.

14. Claim 2-5 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. Claim 6, 9, 14 and 16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to show or suggest an OFDM transmitter comprising a source of OFDM data packets, a code table having as output code symbols whose frequency spectrum contains one or more OFDM sub-carriers, and a multiplier connected to each of the source of IPDM data packets and the code table for multiplying the data packets by the code symbols as recited in claim 7. Bohnke (U.S. Pat. No. 6,160,791) discloses a transmission system for the transmission of power control information in an OFDM system. A multiplier 16 is used to multiply a data 4 and a phase/frequency as shown in Fig. 2. Furthermore, the data 4 is channel-coded, col. 5, ln. 29-31, not the sub-carrier. Furthermore, the channel coding is different from an output code symbols based on the frequency. Zimmerman et al. (U.S. Pat. No. 6,522,700) discloses a method and system for the OFDM multicarrier transmission of digital broadcasting signals and the design includes a symbol mapper 40, Fig. 1. However, the symbol mapper is designed for digital audio broadcasting (DAB).

The prior art of record also fails to show or suggest an OFDM receiver comprising an OFDM sampler having samples as outputs, a decimator connected to receive the samples from the OFDM sampler and retain each Mth sample while discarding all other samples, and an accumulator connected to receive each Mth sample from the decimator and having as output summer decimated samples corresponding to a constructive combination of the OFDM sub-carriers as recited in claim 12. Prior art shows decimators used to extract signals of certain frequencies and accumulators used as a summer, but not a decimator and an accumulator working together. Junell et al. (U.S. Pat. No. 6,125,124) discloses a synchronization and sampling frequency in an apparatus receiving OFDM modulated transmissions. A sampling frequency 31 is used as the basis for a sampling frequency correction and thus adjustment, not decimating nor accumulating. Fig. 7; see also col. 8, ln. 29-32. Shirakata et al. (U.S. Pat. No. 6,169,751) discloses an OFDM receiving apparatus. A sampler 101 is used to sample the signal in an intermediate frequency range at leading edges of the time signal that corresponds to a clock signal reproducer 111, to convert the signal into a digital data. Fig. 1; see also col. 5, ln. 17-22.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cupo et al. (U.S. Pat. No. 6,377,566) discloses an OFDM subcarrier hopping in a

multiservice OFDM system. Although not FDM related, a previous Cupo et al. (U.S. Pat. No. 6,347,071) discloses a time division multiplexed transmission of OFDM symbols.

Kim et al. (U.S. Pat. No. 6,172,993) discloses a frame synchronization method and apparatus for use in digital communication system utilizing OFDM method. Kim requires a control signal generator 300 that feeds into a frame synchronization unit 400 and outputs a frame sync signal. Fig. 3. However, this design requires a comparator 320 and is not comparable with the invention at hand. Fig. 3.

Michon et al. (U.S. Pat. No. 6,282,167) discloses an OFDM signal organized so as to simplify reception. Michon transmits signal towards a plurality of receivers. Each source signal is subjected to some signal coding 22 before transmission, but the coding is done at the buffers 24 where the data is stored, although a single complete signal is recreated from a series of symbols 26 ready for transmission.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 703-305-8963. The examiner can normally be reached on Monday through Friday, 830am-530pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H Pham can be reached on 703-305-4378. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

BW:bw


CHI PHAM
SUPERVISOR EXAMINER
TECHNICAL 200 10/23/03